Paper No. 35

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte HANS ULRICH FRUTSCHI and HANS WETTSTEIN

Appeal No. 2003-0213
Application No. 09/255,712

HEARD: March 2, 2004

Before COHEN, ABRAMS and MCQUADE, Administrative Patent Judges.

MCQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Back from a remand to the examiner (see Paper No. 30), this application is again before us for review of the appeal by Hans Ulrich Frutschi et al. from the final rejection (Paper No. 18) of claims 1, 2, 4 through 6, 27 and 29.

THE INVENTION

The invention relates to a method for operating a power plant. Representative claim 1 reads as follows:

1. A method for operating a power plant including a CO_2 process, the method comprising the steps of:

compressing a working fluid;

heating the working fluid at a constant pressure, heating the working fluid at a constant volume, or both;

expanding the working fluid at a constant entropy;

discharging heat from the working fluid at a constant pressure, discharging heat from the working fluid at a constant volume, or both; and

regulating the degree of charging of the process and the power of the process by extracting CO_2; and

the CO_2 process comprising internal combustion of a fuel and an oxidant necessary for oxidation.

THE PRIOR ART

The references relied on by the examiner to support the final rejection are:

Greul (German Patent Document)	3643401	Jun. 30, 1988
Goto et al. (Goto) (Japanese Patent Document)	4-279729	Oct. 05, 1992

THE REJECTIONS

Claims 1, 2, 4 through 6, 27 and 29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Greul.

Claim 1 additionally stands rejected under 35 U.S.C. § 102(b) as being anticipated by Goto.

Attention is directed to the main and reply briefs (Paper

Nos. 21 and 23) and to the main and supplemental answers (Paper Nos. 22 and 31) for the respective positions of the appellants and the examiner regarding the merits of these rejections.[1]

DISCUSSION

Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

As framed by the appellants, the dispositive issues with respect to the anticipation rejections on appeal are whether Greul and Goto respectively meet the recitation in independent claim 1 of the step of "regulating the degree of charging of the process and the power of the process by extracting CO_2," and whether Greul meets the corresponding and arguably broader recitation in independent claim 29 of the step of "regulating the degree of charging of the process by extracting CO_2."

Both Greul and Goto disclose a method of operating a power plant which cycles CO_2 gas as a working fluid. The Greul plant

[1] The record indicates that English language translations of the Greul and Goto references were mailed to the appellants with the supplemental answer.

(see Figure 1) includes a compressor 17, a combustion chamber 3, a mixing chamber 1, a steam generator 18, a gas turbine 19, a feed water pre-heater 20, a condenser 21, an air decomposition device 24 for producing O_2, and a liquefier 23. Similarly, the Goto plant (see Figure 1) includes a compressor 1, a combustion chamber 3, a gas turbine 2, a boiler 5, a condenser 8, an O_2 manufacturing apparatus and compressor 11 and 12, and a liquefier-separator 14. Of particular interest are Gruel's liquefier 23 and Goto's liquefier-separator 14.

Greul teaches that the liquefier 23 functions to separate, fluidize (i.e., liquify) and discharge excess CO_2 gas extracted from the main CO_2 cycle (see pages 3, 7 and 11 in the translation).

Likewise, Goto teaches that the liquefier-separator 14 acts in conjunction with an extraction line 13 to separate, liquify and discharge excess CO_2 gas extracted from the main CO_2 cycle, explaining that the amount of CO_2 gas extracted corresponds to the amount of O_2 fed into the system upstream of the combustion chamber 3 (see pages 2 and 7 through 12 in the translation).

In determining that the subject matter recited in claims 1 and 29 is anticipated by Greul and that the subject matter recited in claim 1 is additionally anticipated by Goto, the

examiner finds that the regulating steps recited in these claims are inherently met by the operation of Greul's liquefier 23 and/or Goto's liquefier-separator 14 (see, for example, pages 3 through 5 in the supplemental answer).

The appellants counter that "[t]he claims all recite, *inter alia*, a regulating step, which by the plain meaning of the words includes controlling; neither *Gruel* [sic] nor *Goto* describe or are concerned with controlling the degree of charging of the process by CO_2 extraction" (main brief, page 7). In this vein, the appellants further submit that "[t]here is a significant and patentable difference between mere extraction of CO_2 and regulation of a CO_2 cycle process by extracting CO_2" (main brief, page 6) and that "[r]egulation of a process by CO_2 extraction involves a degree of control which is absent from mere extraction of CO_2" (main brief, page 7).[2]

A prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating

[2] To support this line of argument, the appellants have appended to the main brief a dictionary definition of the term "regulate," to wit: "1. To control or direct in agreement with a rule. 2. To adjust in conformity to a requirement or specification. 3. To adjust (a mechanism) for accurate and correct operation." Webster's II, New College Dictionary (Houghton Mifflin Company 1995).

reference. Schering Corp. v. Geneva Pharmaceuticals Inc., 339 F.3d 1373, 1377, 67 USPQ2d 1664, 1667 (Fed. Cir. 2003). Inherent anticipation does not require that a person of ordinary skill in the art at the time would have recognized the inherent disclosure. Id. The fact that a characteristic is a necessary feature or result of a prior art embodiment is enough for inherent anticipation, even if that fact was unknown at the time of the prior invention. Toro Co. v. Deere & Co., 355 F.3d 1313, 1321, 69 USPQ2d 1584, 1590 (Fed. Cir. 2004). In other words, where a result is a necessary consequence of what was deliberately intended, it is of no import that a reference did not appreciate the results. Mehl/Biophile International Corp. v. Milgraum, 192 F.3d 1362, 1366, 52 USPQ2d 1303, 1307 (Fed. Cir. 1999).

Neither Greul nor Goto expressly teaches that the CO_2 gas extraction step disclosed therein is for the purpose of regulating the degree of charging of the process and the power of the process. As indicated above, however, each reference does describe the extraction step as serving the purpose of removing excess CO_2 gas from the working fluid cycle, i.e., from the charge of the process. This belies the appellants' contentions that neither Greul nor Goto is concerned with controlling the

degree of charging of the process and that neither reference utilizes the extraction step to control or regulate the process. Although Greul and Goto do not expressly so state, it is manifestly self-evident from a fair reading of their disclosures, and the appellants do not dispute, that the CO_2 gas extraction steps described therein do in fact directly affect the degree of charging and the power of their associated processes. Thus, the disclosed deliberate practice of such steps inherently regulates the process to the extent broadly recited in claims 1 and 29.

For these reasons, the appellants' position that the subject matter recited in independent claims 1 and 29 distinguishes over Greul and that the subject matter recited in claim 1 distinguishes over Goto is not persuasive. We shall therefore sustain the standing 35 U.S.C. § 102(b) rejection of claims 1 and 29, and dependent claims 2, 4 through 6 and 27, as being anticipated by Greul as well as the standing 35 U.S.C. § 102(b) rejection of claim 1 as being anticipated by Goto.

SUMMARY

The decision of the examiner to reject claims 1, 2, 4 through 6, 27 and 29 is affirmed.

AFFIRMED

IRWIN CHARLES COHEN Administrative Patent Judge	)	
NEAL E. ABRAMS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JOHN P. MCQUADE Administrative Patent Judge	)	

JPM/gjh

ROBERT S. SWECKER
BURNS, DOANE, SWECKER & MATHIS
P.O. BOX 1404
ALEXANDRIA, VA 22313-1404